"A STUDY TO EVALUATE THE EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AMONG POST OPERATIVE CARDIO THORACIC SURGERY PATIENTS IN VINAYAKA MISSION HOSPITAL AT SALEM"

By

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Dharamarathnakara Dr. Mahalingam Institute of Paramedical Science and Research,

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ENDORSEMENT BY HEAD OF THE INSTITUTION

This is to certify that the dissertation entitled **"A STUDY TO EVALUATE THE EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AMONG POST OPERATIVE CARDIO THORACIC SURGERY PATIENTS IN VINAYAKA MISSION HOSPITAL AT SALEM"** is a bonafide research work by Mrs.ROSY V under the guidance of Mrs.D. Tulasimani M.Sc., (N) Reader Cum HOD of Medical Surgical Nursing Department, Dharmarathnakara Dr. Mahalingam Institute of Paramedical Sciences and Research, Sakthi Nagar, Bhavani Taluk, Erode District.

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DECLARATION

I hereby declare that the present dissertation titled **"A STUDY TO EVALUATE THE EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AMONG POST OPERATIVE CARDIO THORACIC SURGERY PATIENTS IN VINAYAKA MISSION HOSPITAL AT SALEM"** is the outcome of the original research work undertaken and carried out by me under the guidance of **Prof. Mrs.Kalaivani M.Sc (N).,** principal cum Professor**, Mrs.D.Tulasimani, M.Sc(N).,** HOD, in Medical Surgical Nursing department, I also declare that the material of this has not found in any way the basis for the award of any degree or diploma in this university or any other university.

ROSY V

Msc Nursing 11 year

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"Without god one can do nothing

With god we can do anything"

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LIST OF ABBREVIATIONS

CABG	Coronary artery bypass grafting
DMIPSR	Dharmarathnakara Dr.Mahalingam Institute of paramedical science and research
FM	Foot massage
Fig	Figure
H0	Null Hypothesis
H1	Research hypothesis
H2	Research hypothesis
HOD	Head of Department
M.Sc.,(N)	Master of science(nursing)
N	Total number of samples
VMH	Vinayaka Mission Hospital
No	Number
NRS	Numerical rating scale
P	Probability
POD	Post operative day
Prof.	Professor
S.D	Standard Deviation
S	Significant
VAS	Visual analogue scale
VNRS	Verbally Administered Numerical Rating Scale
VRS	Verbal Rating Scale
X^2	Chi-Square Test
%	Percentage

ABSTRACT

STATEMENT OF THE PROBLEM

"A STUDY TO EVALUATE THE EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AMONG POST OPERATIVE CARDIO THORACIC SURGERY PATIENTS IN VINAYAKA MISSION HOSPITAL AT SELAM

OBJECTIVES

1. To assess the level of post operative pain in cardiothoracic surgery patients before and after the implementation of foot massage.

2. To determine the effectiveness of foot massage to reduce the level of pain among post operative cardiothoracic surgery patients.

3. To find out the association between post opertive pain with the selected demographic variables.

HYPOTHESIS

H_1: The post-foot massage pain score will be significantly lower than the pre-foot massage pain score.

H_2: There will be a significant association between pre-foot massage pain score and the selected variables.

RESEARCH DESIGN AND METHOD

One group pre test post test design was used for the present study. Sample consisted of 30 post operative patients with cardiothoracic surgery, who met the inclusion criteria. Tool used was numerical pain scale to assess pain intensity. Data was analyzed using descriptive and inferential statistics.

RESULTS

The study result shows that a significant difference in level of pain among post operative cardiac thoracic surgery patients.

There was significant association between pre foot massage pain with the selected variables such as age (χ^2= 18.02), $p < 0.05$) and sex (χ^2= 11.2) there was no significant association between pain score with other variables.

Conclusion

The results showed that foot massage is an effective non pharmacological method for reducing post operative pain. Foot massage is a simple non invasive cost effective method that can be used effectively for the management of post operative pain.

CHAPTER I

INTRODUCTION

"Pain is an elusive and complex phenomenon, and despite its universality its exact nature remains a mystery."

Taylor (2015), United States**,** states that there are many possible sources of pain following cardiac surgery. Wound pain is inevitable, and in addition to the sternotomy incision there may be an extensive leg wound following vein harvesting. Additional sources of pain and discomfort include mediastinal and pleural drains, tracheal tubes and urethral catheters. Physiotherapy, movement, and tracheal toilet (i.e. suctioning of secretions) add to the patient's distress. Acute pain from the incisions has usually become tolerable after the third day, but complications may arise leading to further pain. These include wound infection, haematoma formation, sternal dehiscence, pleural effusion, pneumonia and myocardial infarction. Bacterial mediastinitis and pericarditis are occasional sources of severe pain, and patients who have sustained a recent myocardial infarction may develop Dressler's syndrome. Retraction of the chest wall intraoperatively can cause trauma to the thoracic cage, leading to the development of costochondritis, musculoskeletal or myofaseial pain postoperatively.

Balram Airan, (2012), Mumbai**,** states that in India there appears to be an epidemic of cardiovascular diseases. Due to industrialization, urbanization and changing life style, cardiovascular and pulmonary diseases are becoming more common and the incidence is an all time high. Every year 50,000 new cases of lung carcinoma and 20,000 cases of oesophageal carcinoma are diagnosed. Roughly more than six million people have coronary artery disease and about five million people have rheumatic heart disease. Concrete data is not available about the incidence of congenital heart diseases, but approximately 2, 00,000 babies are born every year with some form of congenital cardiothoracic defect. With the aging population, degenerative diseases of the aorta are also increasing. Presently more than 60,000 open-heart procedures are performed every year in our country and majority of these

Procedures are for coronary artery disease and valvular heart disease. About 5000 operations are performed every year for congenital heart disease in a few centres.

Black MJ et al, (2006), United State**,** states that pain is an expected outcome postoperatively, yet one of the most frequent postoperative problems is inadequate analgesic administration. All patients who have just had surgery will experience pain. Pain medication should be given when needed and prior to pain becoming severe. Pain may be caused by a factor unrelated to the surgical procedure such as poor positioning; discomfort of a full bladder can initiate abdominal pain even when appropriate medications have been administrated.

Hawks JH, 2006, United States, states that effective pain control is best achieved through a combination of both pharmaceutical and non-pharmaceutical therapies. Pharmaceutical management has been the primary means of providing relief from pain. Although pharmaceutical medications continue to serve as a major contributor to pain management, non-pharmaceutical techniques are being increasingly used to provide pain relief. Non-pharmacologic interventions are particularly useful when (a) medications are inadequate to control pain; (b) client is waiting for medications to take effect; (c) when side effects or client concerns make the use of medications problematic.

Wang HL, Keck JF, (2004), United States, states that main causes are increase in sympathetic response of the body with subsequent risk in HR, cardiac work load and O_2 consumption. Prolonged pain can reduce physical activity and lead to venous stasis and increase risk of deep vein thrombosis and subsequent pulmonary embolism.

Potter PA and Perry AG ,(2003) ,United States**,** states that pain is much more than a physical sensation caused by a specific stimulus. The pain experience is complex involving physical, emotional and cognitive components. Pain is subjective and highly individualised. The stimulus for pain can be physical and/or mental in nature.

Taylor C (2003), United Sates**,** states that many non-pharmacologic methods relieve pain but are not widely used. Complementary therapies are attracting attention and patients are interested in alternatives to biomedicine. In response to patients' interests, nurses are exploring ways to incorporate therapies such as the following:

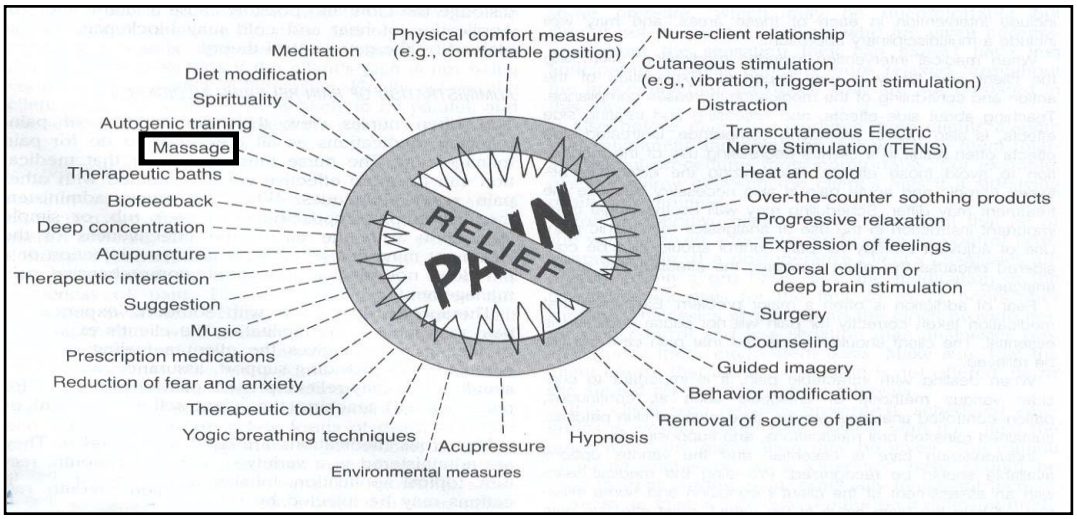

Fig:1 Non Pharmacological Pain relief measures

Potter and Perry (2003), United States**,** states that Joint Commission on the Accreditation of Healthcare Organization, 2003 standards declared that "pain is assessed in all patients" and the patients have the right to appropriate assessment and management of pain management.

Schafheutle EI, (2001), France**,** states that during a patient's stay on a surgical ward, nurses hold a great deal of responsibility for pain management, especially when analgesics are prescribed on a PRN basis. Despite the availability of effective analgesics and new technologies for drug administration studies continue to demonstrate suboptimal pain management.

Black MJ et al, (2001), United States**,** states that pain is a complex, multifaceted phenomenon. It is an individual, unique experience that may be difficult to describe or explain, and often difficult for others to recognise, understand, and assess. Pain often leads to debilitation, diminished quality of life and depression.

Pain management challenges every healthcare team member, for there is no single universal treatment**.**

Camp Well (1995), United States**,** states that pain is the 5th vital sign.

Macaffery (1999), United States**,** states that pain means, "Whatever the person says it is, existing whenever the experiencing person says it does"

Melzack and Wall (1998), Miami**,** states that physical concept of pain was developed by Muller in 1842 and Von Frey in 1892-95. Although the psychological aspects of pain came to be acknowledged early in the 20th century in some quarters, one of the first widely accepted theories to encapsulate the idea came from Melzack and wall in1965 in their gate control theory. The gate which is said to exist at the spinal cord level opens to raise the perception of pain and closes to decrease if under the influence of physical, emotional and behavioural factors.

McQuay, (1997), France**,** states that postoperative pain is one of the most common therapeutic problems in hospitals. It can increase morbidity leading to reduced breathing and cough suppression, facilitating retained pulmonary secretions and pneumonia, and delaying normal gastric and bowel function, and thus contributing to a longer recovery period. Strategies aimed at reducing postoperative pain increase patient's comfort and can shorten hospital stay.

Champman CR, Gavrin J, (1993), Italy**,** states that suffering is a frequent consequence of pain and comfort may not be possible in the presence of pain. Helplessness and suffering are experienced when individuals have insufficient resources and are unable to cope up.

Pain is not an unavoidable consequence of surgery. In the majority of patients, postoperative pain is preventable with adequate analgesics and by the appropriate use of newer techniques (**Jorda T 1995)** despite this a number of surveys have shown a high prevalence of significant pain after surgery. The recognition of the inadequacy of postoperative pain management has promoted the development of corrective efforts by surgeons, anaesthesiologists and pain management groups.

NEED FOR STUDY

Wang HL, Keck JF (2004), United States**,** states that pain medicines may be more effective when combined with other pain relief techniques. The effectiveness of the drug may be increased with change in the position of the client, back rub, foot rub, or simple interaction with the patient. Foot and hand massage have the potential to aid pain relief.

They conducted a pre-test post-test single group design with participants serving as their own controls in a 39-bed unit at a large teaching hospital in the mid-west between May 1, 2000 and May 1, 2001 to find out the effect of foot and hand massage to decrease pain among postoperative patients who had undergone gastro-intestinal, gynaecological, head neck plastic or urological surgery. A 20-minute foot and hand massage (5 minutes on each extremity) was given and the pain intensity and distress were measured by a 0-10 numerical scale in the modified brief pain inventory. The subjects reported a 56% decrease in pain intensity from 4.65 to 2.35 ($t=8.154$, $P < 0.001$). Pain distress decreased from 4.00 to 1.88 ($t=5.683$, $P < 0.001$). The symptomatic response to pain including heart rate and respiratory rate also significantly decreased ($P < 0.05$).

Lia CC et al (2002), Japan**,** states that massage stimulates cutaneous mechanoreceptors that activate large primary afferents. Massage is the most widely used complementary therapy in nursing practice. It is one of the ways nurses use to communicate caring to patients and touch is central to the nurse's role in healing. Massage is an extended form of touch, which results in mutual energy exchange. It soothes pain and produces relaxation. It increases pain thresholds, and therefore modifies an individual's perception of pain.

Keene A M (2001), Japan**,** states that postoperative pain is a routine poorly controlled by pharmacological means alone. Complementary strategies based on sound research findings are needed to aid in postoperative pain relief as patients routinely report mild to moderate pain even through pain medications have been administered.

Grealish L (2000), France**,** conducted a study to measure the effect of foot massage on the subjective experience of pain, nausea and relaxation among cancer patients admitted to a general hospital was conducted on 62 cancer patients in a cancer hospital in Southern Norway. The result of the study revealed that the mean pre-treatment pain score was 25 which reduced to 15.3. Mean post-test nausea score was decreased from 17.5 to 11; the mean pre-test relaxation score was 54 which reduced to 31.8.

Lellan KM (1997) New York**,** states that studies show that pain management following surgery continues to be inadequate. Consequences of under-treated pain include an increased incidence of nausea and vomiting, increased predisposition to respiratory and mobility complications.

Manjelkar P (1996), India**,** conducted a quasi-experimental study at Municipal Hospital, Mumbai in 1996 to identify the effect of back massage on the pain of postoperative patients who had under gone closed mitral commissurotomy. The result of the study showed that on second postoperative day 35% patients in the experimental group received analgesics, whereas all the patients received analgesics in the control group. As for the frequency and time of intake was concerned, those who needed analgesics in the experimental group received it only once whereas in the control group 75% received twice.

The researcher has come across patients who had inadequate pain relief during postoperative period with pharmacological measures alone. The difficulty with introducing complementary therapies such as foot massage into nursing practice is that there is little empirical evidence to support the use. It is also observed that published research studies and trials on foot massage in the Indian setting are very much limited. Hence this study may be considered important in providing empirical evidence and its efficiency in reducing postoperative pain in patients with abdominal surgery.

Hence the investigator was interested to the study: “A study to evaluate the effectiveness of foot massage on the level of pain among post operative cardio thoracic surgery patients in Vinayaka Mission Hospital. So that complimentary therapies can be incorporated in to pain relief regimen.

STATEMENT OF THE PROBLEM

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OBJECTIVES OF THE STUDY

1 To assess the level of post operative pain in cardiothoracic surgery patients before and after the implementation of foot massage.

2 To determine the effectiveness of foot massage to reduce the level of pain among post operative cardiothoracic surgery patients.

3 To findout the association between post operative pain with the selected demographic variables.

HYPOTHESES

H_1: The post-foot massage pain score will be significantly lower than the pre-foot massage pain score.

H_2: There will be a significant association between post-foot massage pain score with the selected variables such as age and type of surgery.

OPERATIONAL DEFINITIONS

EVALUATE:

In this study evaluate refers to, the act of judging or assessing the effectiveness of foot massage to what extent the pain is been reduced for post operative cardiothoracic surgery patients.

EFFECTIVENESS:

Successful in producing a desired (or) intended result.

In this study effectiveness refers to the influence of foot massage on the level of pain, as measured by a numerical pain scale.

FOOT MASSAGE:

Manipulation, methodical pressure, friction and kneading of the foot.

In this study foot massage refers to the low stroke manipulations applied on the legs by working through the arch of the foot, stop and apply pressure, press a little harder in between and repeat the activity over the toes, tip of the toes, under and over the foot for 10 minutes on each foot. Massage will be given when the client has moderate to severe pain, 4-5 hours after the administration of analgesics.

POSTOPERATIVE CARDIOV THORACIC SURGERY PATIENTS:

In this study it refers to the individuals who have undergone cardiovascular and thoracic surgery of any type having pain score more than 3 on the numerical pain scale which represents moderate to severe pain.

PAIN:

An unpleasant sensation that can range from mild, localised discomfort to agony.

In this study level of pain refers to the unpleasant sensation experienced by the post operative cardiothoracic surgery patients and rated by them against the numerical pain scale.

HOSPITAL

An institution for the care, diagnosis and treatment of the sick and injured.

ASSUMPTIONS

1. All postoperative patients will have some amount of pain.
2. Pain is multifactorial.
3. Pain is an individual unique experience.
4. Postoperative pain is poorly controlled by pharmacological means alone.
5. Foot massage is one of the effective non-pharmacological methods of pain relief.

LIMITATIONS

The study is delimited to:

- Thirty postoperative cardiothoracic surgery patients only
- Patients who are willing to participate.
- Patients who are conscious.

CHAPTER II

REVIEW OF LITERATURE

A review of literature is a compilation of resources that provide the ground work for further study. It helps with the conceptualization of research problems and the determination of specific problems and the determination of specific methodology to be used for further exploration of the problems. (**Talbot LA 1995)**

Thus the review of literature is an essential step in the development of a research project. It helps the researcher to design the proposed study in a scientific manner to achieve the desired result. It helps to determine the gaps consistencies and inconsistencies in the available literature about a particular subject under the study.

This chapter attempts to present a review of studies alone, methodology adopted and conclusion assured by earlier investigators; which helps to study the problem in depth. The sources to obtain more information on the selected topic were internet search, text book, published journals, published and un published thesis. In this chapter, the researcher presents the review of literature under the following headings:

1. **Literature related to cardiothoracic surgery and pain**
2. **Literature related to effectiveness of numerical pain scale.**
3. **Literature related to effectiveness of foot massage**
    - Effect of foot massage on pain.
    - Effect of foot massage on other variables.

LITERATURE RELATED TO CARDIO THORACIC SURGERY

BRUCE J (2015), Scotland**,** analysed the follow-up of a cohort of 1348 patients who underwent cardiac surgery between 1996 and 2000 at one cardiothoracic unit in northeast Scotland. The cumulative prevalence of post-cardiac surgery pain was 39.3% (CI_{95} 36.4-42.2%) and mean time of 28 months since surgery (SD 15.3 months). Prevalence of chronic pain decreased with age, from 55% in those aged fewer than 60 years to 34% in patients over 70 years.

Chronic pain following median sternotomy and saphenous vein harvesting is more common than higher to report and that patients undergoing CABG should be warned of this possibility.

Paula S et al, (2009) United States, described symptom management strategies used by elderly patients (n = 236) 3 and 6 weeks after coronary artery bypass surgery. Overall, fewer patients experiencing sleep disturbances (39%), incision pain (39%), swelling (46%), and appetite problems (17%) reported using a strategy to manage their symptom.

Sue C. Ho, (2006), United Kingdom, conducted pain surveys to all patients who underwent coronary artery bypass graft surgery from 1997 to 1999 from a single surgeon's experience. The incidence of persistent pain at any site was 29% and for sternotomy was 25%. The intensity of pain reported was mild, with only 7% reporting interference with daily living. Other common locations of persistent pain were the shoulders (17.4%), back (15.9%), and neck (5.8%). Twenty patients (8%) described symptoms suggestive of the internal mammary artery syndrome

KING, **(2004),** United States**,** investigated the effects of a personal control intervention in the form of self-administered versus nurse-administered pain medication after cardiac surgery, and its interaction with patients' desire for control, patients' perception of pain intensity, disruption in daily activities, emotional responses, and use of pain medication over time. A time by group interaction was found in reports of pain intensity, $p < .05$, with subjects in the experimental group

reporting higher levels of pain intensity than subjects in the control group in the early postoperative period.

GJEILO, K. H (2000) France**,** assessed chronic pain and health-related quality of life after cardiac surgery. Pain was measured by the Brief Pain Inventory. Results: Five hundred and twenty-one patients were alive 12 months after surgery; 462 (89%) and 465 (89%) responded after 6 and 12 months, respectively. Chronic pain was reported by 11% of the patients at both measurements. Younger age was associated with chronic pain [odds ratio 0.7 (95% confidence interval: 0.5-0.9)] at 12 months.

Vibhu R. Kshettry MD (2005) United States**,** evaluated the feasibility, safety, and impact of a complementary alternative medical therapies package for heart surgery patients. One hundred and four patients undergoing open heart surgery were prospectively randomized to receive either complementary therapy (preoperative guided imagery training with gentle touch or light massage and postoperative music with gentle touch or light massage and guided imagery) or standard care. Pre-treatment and post treatment pain and tension scores decreased significantly in the complementary alternative medical therapies group on postoperative days 1 ($p < 0.01$) and 2 ($p < 0.038$).

Kianfar et al (2007) United States**,** conducted a study to find the location, distribution, and intensity of pain in a sample of adult cardiac surgery patients during their postoperative ICU stay. In a prospective study, pain location, distribution (number of pain areas per patient), and intensity (0–10 numerical rating scale) were documented on 250 consecutive adult patients on the first, second and third postoperative day (POD). Patient characteristics (age, sex, size, and body mass index) were analyzed for their impact on pain intensity. There were 140 male and 110 female patients, with a mean ± SD age of 65.7 ± 13.5 years .The maximal pain intensity was significantly higher on POD 1 and 2 (3.7 ± 2 and 3.9 ± 1.9, respectively) and lower on POD 3 (3.2 ± 1.5). The order of overall pain scores among activities ($P < 0.001$) from highest to lowest was coughing, moving or turning in bed, getting up, deep breathing or using the incentive spirometer, and resting. After chest tubes were discontinued, patients had lower pain levels at rest ($P = 0.01$), with coughing ($P = 0.05$). Age and sex was found to have an impact on pain

intensity, with patients <60 years old and male patients having a higher pain intensity than older patients on POD 2 (4.7 ± 2.0 vs. 3.2 ± 2.4, *P* = 0.02 and 4.5 ± 2.3 vs. 2.9 ± 2.2, respectively).Pain relief is an important outcome of care. A comprehensive, individualized assessment of pain that incorporates activity levels is necessary to promote satisfactory management of pain.

LITERATURE RELATED TO EFFECTIVENESS OF NUMERICAL PAIN SCALE

Laetitia Marquié (2008), France**,** conducted a study to know how patients and physicians use the visual analogue scale (VAS) and the verbally administered numerical rating scale in a French emergency department (ED).Patients (N = 198) and their physicians (N = 48) rated the patients' pain from 0 to 10 using both VAS and VNRS, both at arrival at and on discharge from the ED. The ratings obtained by VAS and VNRS were highly correlated, for both patients and physicians.

Polly E. Bijur, (2005), France**,** assessed the comparability of the NRS and visual analog scale (VAS) as measures of acute pain, and to identify the minimum clinically significant difference in pain that could be detected on the NRS numerical rating scales (NRSs) Of 108 patients entered, 103 provided data at 30 minutes and 86 at 60 minutes. NRS scores were strongly correlated to VAS scores at all time periods (r= 0.94, 95% CI = 0.93 to 0.95). The slope of the regression line was 1.01 (95% CI = 0.97 to 1.06) and their-intercept was −0.34 (95% CI =−0.67 to −0.01). The minimum clinically significant difference in pain was 1.3 (95% CI = 1.0 to 1.5) on the NRS and 1.4 (95% CI = 1.1 to 1.7) on the VAS. Conclusions: The findings suggest that the verbally administered NRS can be substituted for the VAS in acute pain measurement.

Diane M. Birnbaumer, (2003), Italy, compared the visual analog scale (VAS) and the verbally administered numerical rating scale (NRS) for assessing pain.

Patients rated the severity of their pain by marking a point on a 10-cm VAS (0=no pain and 10=worst possible pain) and by verbally responding to a 10-point NRS (0=no pain and 10=worst possible pain). . The VAS and NRS scores were strongly correlated (slope of regression line, 1.01). The minimum clinically significant difference in pain measurement was 1.3 on the NRS and 1.4 on the VAS.This and other studies show that the VAS and the NRS are reproducible and comparable methods for measuring pain.

R. A. Seymour, (2000), London**,** compared two 10 cm visual analogue scales , a 0–10 point numerical rating scale and a four-point verbal descriptive scale, in assessing pain severity in twelve patients with post-operative pain following removal of an impacted lower third molar. High correlations were shown between the pain scores from the two visual analogue scales and the numerical scale.

Breivik, (1999), Miami**,** examined the agreement and estimated differences in sensitivity between pain assessment scales. Multiple simultaneous pain assessments by patients in acute pain after oral surgery were used to compare a four-category verbal rating scale (VRS-4) and an 11-point numeric rating scale (NRS-11) with a 100-mm visual analog scale (VAS). The simulation results demonstrated similar sensitivity of the NRS-11 and VAS when comparing acute postoperative pain intensity.

Jawaid.M (1999), Iran, assessed the acute postoperative pain management by a surgical team and patient satisfaction in a tertiary care teaching hospital. : 105 patients, both sexes, mean age of 35.1 +/- 14.6 years, scheduled for general surgery under routine practice conditions, were included in the study. All patients were assessed 12 and 24 hours postoperatively by two numerical visual analogue scale (VAS 0-10), related to rest and dynamic pain. At 12 hours postoperatively mean rest and dynamic pain scores were 3.85 +/- 2.45 and 5.32 +/- 2.61 respectively. At 24 hours postoperatively mean rest and dynamic pain scores were 2.84 +/- 1.86 and 4.65

+/- 2.47 respectively. Overall, female patients experienced more pain but there was no statistically significant difference apart from rest pain at 24 hours.

Mark P. Jensen, 1993, United States, conducted a study to provide an empirically derived guideline for determining the number of levels needed to assess self-reported pain intensity. The results suggest that 10- and 21-point scales provide sufficient levels of discrimination, in general, for chronic pain patients to describe pain intensity.

LITERATURE RELATED TO EFFECTIVENESS OF FOOT MASSAGE ON PAIN

Kim JH (2002), Korea, conducted a Non equivalent control group, pre test post test design study in a university hospital in Seoul Korea on 40 patients who operated under G/A from July 7, 2000 to Feb 20, 2001 to investigate the effects of foot massage on pain in post abdominal operative patients. Severity of pain was checked with VAS and vital signs were measured with PR, SBP and DBP. Collected data were analyzed by the chi-square, Fishes exact test, t-test and repeated measures ANOVA. The severity of pain decreased significantly in the experimental group as compared to the control group following foot massage t= -3.37, p=.002. The PR in the experimental group was lower than that is the control group following foot massage (F=7.73, P=.008). The SBP in the experimental group was lower than that in control group following foot massage (F=25.75, P=.000).

Wang HL, **Keck JF (2004),** United States**,** conducted a study to investigate whether a 20-minute foot and hand massage (5 minutes to each extremity), which was provided 1 to 4 hours after a dose of pain medication, would reduce pain perception and sympathetic responses among postoperative patients. . A convenience sample of 18 patients rated pain intensity and pain distress using a 0 to 10 numeric rating scale. They reported decreases in pain intensity from 4.65 to 2.35 ($t = 8.154$, $p < .001$) and in pain distress from 4.00 to 1.88 ($t = 5.683$, $p<0.001$). Statistically significant decreases

in sympathetic responses to pain (i.e., heart rate and respiratory rate) were observed although blood pressure remained unchanged. This pain was reduced by the intervention, thus supporting the effectiveness of massage in postoperative pain management. The authors concluded: "Foot and hand massage appears to be an effective, inexpensive, low-risk, flexible, easily applied strategy for postoperative pain management." Nurses can provide much toward patient comfort and healing by providing and/or teaching massage techniques to family members. Improved patient outcomes include post-operative pain control, without excessive use of risky narcotics, shorter patient recovery times and fewer complications following surgery from patient mobilization.

Chugh D (2006), Kolkata, conducted a quasi-experimental research approach with one group pre-test post-test with interrupted time series design was conducted in a cardio-thoracic speciality hospital, Kolkata (n=30) to determine the effect of ten minutes foot massage on two phases of postoperative coronary artery bypass graft (CABG) patients on pain, blood pressure, pulse rate, respiration. There was significant reduction in the heart rate, respiration and blood pressure measurements between the pre and post-test pain scores indicating a significant difference ($P<0.001$) and the opinionniare showed that most of the patients (80-90%) expressed a positive opinion on foot massage.

Halme (1999), United Kingdom**,** a randomized controlled study conducted at Anaesthetic Department, Stepping Hill Hospital, Stockport, England, examined the effect of foot massage on patients' perception of care received following laparoscopic sterilisation as day care patients. Fifty-nine women were randomly allocated into two groups. The experimental group received a foot massage and analgesia postoperatively; whilst the control group received only analgesia postoperatively. Each participant was asked to complete a questionnaire on the day following surgery. This examined satisfaction, memory and analgesia taken. The 76% percentage response rate was comparable with other patient satisfaction studies following day care surgery. Statistical analysis showed no significant overall difference in the pain experienced by the two groups; however, the mean pain scores recorded following surgery showed a significantly different pattern over time, such that the experimental

group consistently reported less pain following a foot massage than the control group ($p<0.001$). This study has attempted to explore the use of foot massage in a systemic way and is therefore a basis for further study.

Kesselring A, Spichiger E,(1998),United Kingdom**,** conducted an interventional study on foot reflexology (FR) to test if foot reflexology affects the wellbeing, voiding, bowel movements, pain and sleep in women who underwent an abdominal operation. One hundred and thirty subjects were randomised into three groups; 15 minutes foot reflexology/foot massage/talking were given for 4-5 days respectively.

Results show that the women in the foot reflexology group were more able to void without problems, after the indwelling catheter had been removed than women in the comparison groups. There was also a tendency in the FR group for the indwelling catheter to be removed earlier than in the other groups. In comparison the FR-group slept worse than the others. The foot massage (FM) group showed significant results in the subjective measures of wellbeing, pain and sleep.

LITERATURE RELATED TO EFFECTIVENESS OF FOOT MASSAGE ON OTHER VARIABLES

Hayes AJ, (1999), Japan, conducted a quasi-experimental repeated measures design study to find out the immediate effect of a five-minute foot massage on patients in critical care, at Miami Japan, reflected that critical care can be considered to be a stressful environment at both physiological and psychological levels for patients. A five-minute foot massage was offered to 25 patients, selected by purposive sampling which showed there was no significant effect from the intervention on peripheral oxygen saturation. However, a significant decrease in heart rate, ($p<0.01$) blood pressure, ($p=0.02$) and respiration ($p<0.038$) was observed during the foot massage intervention. Result indicated foot massage had the potential effect of increasing relaxation as evidenced by physiological changes during the brief intervention administered to critically ill patients in the intensive care unit.

Nitta N (2001), Japan, conducted a comparative study in Osaka Japan to find out the effect of foot massage. Foot bath and Foot massage combined with Foot bath for relaxation compared with that of a control group. Ten subjects (mean age 72, S.D 2.2) physiological data (H.R and foot skin temperature) were continuously measured and subjective comfort data were obtained before care, immediately after care, Analysis done by one way ANOVA, Tukey's test and Fried man test. Immediately after care, Foot massage resulted in significant decrease in HR in comparison with control group. (P=0.01).

Jirayingmongkol (2002), Japan**,** conducted an experimental study (pre test post test quasi experimental design) in Japan to investigate the effects of biofeedback using foot massage. The sample consisted of four men and sixteen women (age range 61-69 years). Four trained researchers massaged the feet of the subjects and measured vital sign changes. Bio feed back also was investigated before and after the foot massages. Results showed that the average biofeedback and temperature were lower before and after the foot massage (P<0.01). The average PR, respiratory rate and blood pressure however, were found to be lesser after the foot massage (P<0.01).

Mc Ree L (2007) ,United States**,** conducted a study to investigate the effect of pre-operative foot massage on intra and post operative outcomes in 105 females subjects who had a laparoscopic gynaecologic surgery procedure done. The subjects received a 30 minute massage (Foot Massage group) or 30 minutes of passive touch (Control group.) patients in the massage group received significantly less intra operative narcotics (2.2$\pm$ 1.1 versus 2.8 $\pm$ 2.0mg of fentanyl /kg/hour) Patients in the massage group had significantly less postoperative anxiety (massage group, 9.83$\pm$ 2.9 vs control group 11.24$\pm$ 3.6).

Won JS (1999), Korea**,** conducted a study in Seoul – Kyanggi province area of Korea to investigate the effect of foot massage on sleep, vital sign, and Fatigue in the elderly. Data were collected from 20 elderly by convenience sampling and analyzed the change of sleep and sleep satisfaction, vital signs (PR, Respiration, SBP

and DBP) and general fatigue between pre and post foot massage using paired t-test. Result showed significant difference in the sleep and fatigue between pre and post foot massage (P=0.05).

Kim HS, Chang CJ. (2000) Korea conducted an experimental study (pre test post test control group design) in Gachon, Korea among 50 preoperative patients undergoing total hysterectomy 25 were in the experimental group (10 mts foot massage) and 25 in the control group from 10th July to 18th September 2000 to examine the effect of foot massage on anxiety response. The levels of anxiety were measured by VAS, state anxiety scale, BP, PR and respiratory rate. Data analysed using chi-square – test, t-test and ANOVA.

The results showed significant reduction in anxiety level systolic blood pressure, pulse rate and respiration rate of the experimental group after foot massage. Significant differences were found in anxiety level, systolic blood pressure, pulse and respiratory rate between the experimental and control groups after foot massage.

Williamson J, (2002) United Kingdom**,** conducted a randomised control trial of reflexology for menopausal symptoms in the Department of Complementary Medicine, School of Sport and Heath Sciences, University of Exeter, UK, revealed mean (SD) scores for anxiety fell from 0.43 (0.29) to 0.22 (0.25) in the reflexology group and from 0.37 (0.27) to 0.27 (0.29) in the control group who received foot massage over the same period. Mean (SD) scores for depression fell from 0.37 (0.25) to 0.20 (0.24) in the reflexology group and from 0.36 (0.23) to 0.20 (0.21) in the control group. The result revealed foot reflexology was not shown more effective than foot massage in the treatment of psychological symptoms occurring during menopause.

Hattan J (2002) United Kingdom conducted a randomized control trial in a large teaching hospital in England on the impact of foot massage and guided relaxation following cardiac surgery (CABG). Twenty-five subjects were randomly assigned to either a control or one of the two intervention groups (control group n=7, treatment followed normal ward protected, guided relaxation group n=9 and foot

massage group n =9, both followed normal ward protocol along with 20 minutes of either guided relaxation or foot massage). Psychological and physical variables were measured immediately before and after the intervention using VAS. Results showed no significant effects on physiological parameters. There was a significant effect of the intervention on the calm scores among the massage group (x=29.78) (P=0.014). Although not significant, the guided relaxation group also reported substantially higher levels of calm than the control group (x=13.89). There was a clear trend across all patients in the psychological variables for both foot massage and to a lesser extent, guided relaxation to improve psychological wellbeing. This intervention appears to be effective non-invasive technique for promoting psychological wellbeing among CABG patients.

Barbara W (2000), Boston**,** conducted an experimental study was conducted at Massachusetts general hospital Boston on 87 cancer patients on the effects of foot massage and relaxation on decreasing anxiety, pain and nausea. The subjects were given 10-minutes slow, firm, gentle stroke towards the heart from the base of the toes up the foot, and lower limb to the knee. It was found to have significant effect on the perception of pain and nausea when measured with a Visual Analogue Scale. Patients reported pain levels decreased significantly after the foot massage (p=0.01). The findings for a reduction in nausea and an increase in relaxation were equally significant; no change occurred in the control group.

Ferrell-Torry and Glick (1992), Australia, evaluated that ten minute reflexology treatments can provide relief from pain, nausea and anxiety according to a report from the School of Nursing, Division of Science and Design, University of Canberra, Australia. Nurses at the school conducted an empirical study on the use of foot massage as a nursing intervention in patients hospitalised with cancer. 87 patients participated in the study and each received a 10-minute reflexology foot massage (5 minutes per foot). The results revealed that the treatments produced a significant and immediate effect on the patients' perceptions of pain, nausea and relaxation when measured with a visual analogue scale.

Grealish, L. Lomasney, A., Whiteman, B (2000), Australia**,** conducted a study on Foot Massage: A nursing intervention to modify the distressing symptoms of pain and nausea in patients hospitalized with cancer. Researchers noted a significant decrease in anxiety for patients diagnosed with breast or lung cancer and a significant decrease in pain for patients with breast cancer.

CONCEPTUAL FRAMEWORK
ROY'S ADAPTATION MODEL - MODIFIED

A conceptual framework is a theoretical approach to study the problems that are scientifically based, which emphasises the selection, arrangement and classification of its concepts.

A conceptual framework is referred to as the interrelated concepts or abstracts that are assembled together in some rational scheme by virtue of their relevance to a common theme. The overall objective of a framework is to make scientific findings meaningful and generalisable and they also give direction for relevant questions of practical problems.

The conceptual framework for this study is developed by the investigator based on Roy's Adaptation Model. The focus of this theory is the adaptation of the individual to various stimuli, both from the environment and from within. An individual's behaviour is based on the input, control process, output, and feedback mechanism.

Sister Calista, Roy views people as individuals who are in constant interaction with the surrounding environment, an integral whole with biological, psychological, and social components. Individuals have certain needs which they endeavour to meet in order to maintain integrity. The needs are divided into adaptive needs such as physiological, self-concept, role function, and interdependence.

Input: They are the various stimuli which provoke or stimulate the individual. The adaptation level of the individual is determined by the different stimuli to which he/she is exposed. Focal, contextual and residual are the three different stimuli present. The individual is exposed to a variety of stimuli during the postoperative period. To cope with these stimuli, he/she requires various types of comfortable and supportive measures like positioning, massage, relaxation techniques, and deviation techniques.

Focal stimuli: Focal stimuli are those which immediately confront the person. In this study, it is the postoperative pain experienced by post operative patients with cardiothoracic surgery

Contextual stimuli: Contextual stimuli are all other internal and external stimuli of the person that can be identified as having a positive or negative influence on the situation. In this study, the postoperative cardiothoracic surgery pain will be influenced by contextual stimuli like altered nutrition, anxiety, fear of the unknown surroundings, and poor social support.

Residual stimuli: Residual stimuli are those internal factors whose current effects are unclear. The beliefs, attitudes and traits of an individual developed from the past, but affecting the current responses. In this study, they are the past experiences, previous hospitalisation, sociocultural orientation, contact with healthcare professionals, pain threshold, and lack of knowledge regarding the outcome.

Control process: The control process includes biological and psychological coping mechanisms. Regulator and cognator are the two sub-system coping mechanisms.

Regulator: A sub-system coping mechanism which responds automatically through neural-chemical-endocrine processes. In a postoperative cardiothoracic surgery patient, thoracic, nerves transmit pain stimuli to the dorsal root ganglia and to

the posterior horn of the spinal cord. From there the impulse will be transmitted to the thalamus and to the sensory cortex of the brain.

The cognator: Responds through the complex process of perception, information, processing, learning, judgement and emotion. The individual uses the cognitive subsystem by perceiving the information given by the caregivers. In this study the investigator explains the impact of foot massage on postoperative pain and the client will understand, appreciate and cooperate positively and manifest positive behaviour.

Output: Output is the decreased or increased perception to the stimuli and corresponding adaptive or maladaptive behavioural responses.

In this study, it is the decreased intensity of postoperative pain corresponding adaptive behavioural responses.

Feedback: When the output becomes a non-adaptive behaviour response, it may contribute as one of the stimuli which require confrontation or intervention.

The adaptive modes: Adaptive or effectors modes are a classification of ways of coping that manifest regulator or cognator activity.

The physiological mode: It involves the body's basic needs and ways of dealing with adaptation with regard to fluid and electrolytes, nutrition, circulation, oxygenation, elimination, exercise and rest, and the regulation of senses, temperature and endocrine function. Excessive fatigue, fluid electrolyte imbalance, muscular rigidity, irritability, clenching fists, teeth, biting complaints of pain, and elevated blood pressure and heart rate are ineffective or maladaptive responses of physiological mode.

Self-concept mode: Self-concept is related to the basic need for psychic integrity, composite of beliefs, and feelings that one holds about oneself at a given time.

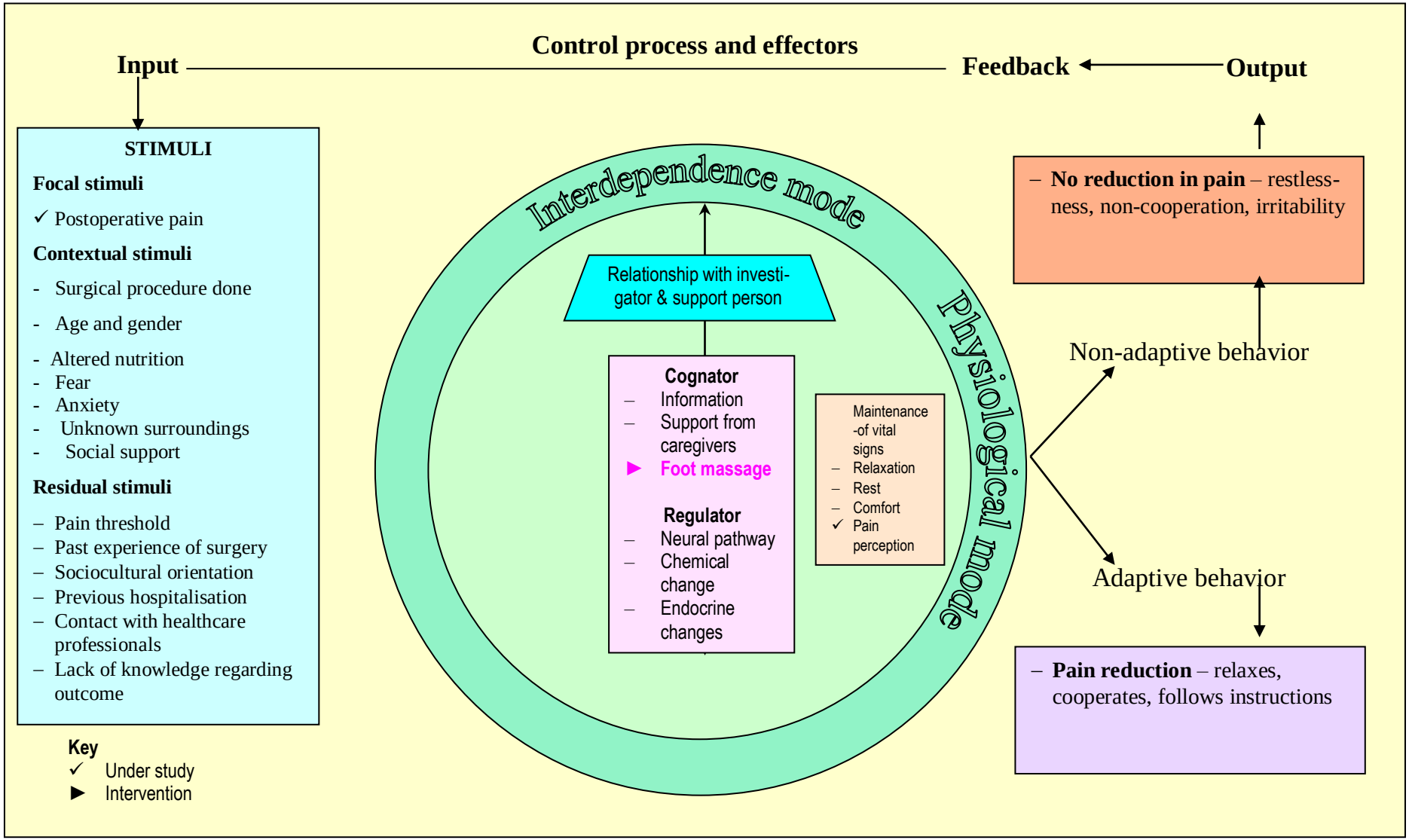
In this study, self-concept refers to the maintenance of moral, spiritual self, and confidence which are adaptive responses; and anxiety, fear, lack of self-control over pain, and irritated mood which are ineffective responses.

Role function mode: Role function is the performance of duties based on given positions in the society. Accepting one's own role as head of the family, mother, teacher, etc are adaptive responses. Restlessness, non-cooperation with care providers, and indifference are ineffective or maladaptive responses.

Interdependence mode: It is the relationship with significant others and the supportive system. In this study, cooperation, maintenance of good interpersonal relationship with the care providers and the investigator are adaptive responses whereas uncooperative behaviour is the nonadaptive response.

Foot massage will help conserve energy, increase circulation, reduce heart rate and blood pressure relieves pain, promote comfort and relax muscles of the individual during postoperative period.

Figure 2: Conceptual framework on impact of foot massage on postoperative cardiothoracic surgery patients based on Roy's Adaptation Model



CHAPTER III
METHODOLOGY

Research methodology is the systematic way of doing a research to solve a problem. It comprises of the statement of the problem. The objectives of the study, the hypotheses that have been formulated, the variables under study, the methods used for data collection and the statistical methods used for analysing the data and the logic behind it. (**Kothari CR, 2003**)

On the whole it gives a general pattern of gathering and processing the research data.

The present study aimed at assessing the impact of foot massage on the level of pain among postoperative patients with cardiothoracic surgery unit at Salem.

RESEARCH APPROACH

In view of accomplishing the main objective of the study an experimental approach was used. An experimental research is the utilisation of scientific research methods and procedures to experiment a problem, treatment practice or policy. It uses analytic means to document the worth of an activity (Wood GL1994

RESEARCH DESIGN

Research design is the overall plan for addressing a research question including specification for enhancing the integrity of the study (Treece EW 1999)

One group pre-test, post-test design was adopted for the study. The pre-test was carried out to assess the level of pain for the postoperative cardio thoracic surgery patients prior to foot massage. After that post test pain was assessed by numerical pain scale.

Subjects	**Pre-treatment**	**Treatment**	**Post-treatment**
Postoperative patients with cardio thoracic surgery who had pain score >3 marked on numerical pain scale	O_1	X	O_2

Figure 4: Schematic representation of the study design

The schematic representation of the research design indicates the following sequential activities that had been carried out to collect the data.

O_1: Assessment of level of pain.

X: Foot massage for 10 minutes.

O_2: Recording level of pain immediately after the intervention

VARIABLES UNDER STUDY

INDEPENDENT VARIABLE

The independent variable is one that is believed to cause some change in the value of the dependent variables. (Donald 1999).

In this study the independent variable is foot massage administered to postoperative cardio thoracic surgery patients.

DEPENDENT VARIABLES

The variable hypothesised to depend on or be caused by another variable. (Polit veck 2008).

In this study dependent variable is the level of pain of postoperative cardio thoracic surgery patients.

TARGET POPULATION

Population is the total number of people who meet the criteria that the researcher has established for a study from whom subjects will be selected and to whom the finding will be generalised.

In the present study population consisted of postoperative cardio thoracic surgery patients.

SAMPLE

A sample is a small portion of the population selected for observation and analysis.

In this study the samples are Post operative cardio thoracic surgery patient in Vinayaka mission hospital at Salem.

SAMPLE SIZE

The number of people who participate in the study

The sample comprised of 30 post operative cardio thoracic surgery patients who met the inclusion criteria in Vinayaka Mission Hospital at Salem.

SAMPLING TECHNIQUE

Sampling refers to the process of selecting a portion of the population to represent the entire population.

In this study non probability purposive sampling technique has been used to select the sample.

Purposive sampling is based on the belief that a researchers knowledge about the population can be used to handpick the cases to be included in the sample.

RESEARCH SITE

The site is where the population or portion of that population is being studied.

In this study site was Vinayaka Mission Hospital at Salem

SETTING

Research setting is the physical location and condition in which data collection takes place. Setting refers to the area where the study is conducted.

Polit and Hungler (2010)

The setting consisted of the cardio thoracic intensive care unit in Vinayaka Mission Hospital at Salem.

SAMPLING CRITERIA

INCLUSION CRITERIA

Post operative cardio thoracic surgery patients with

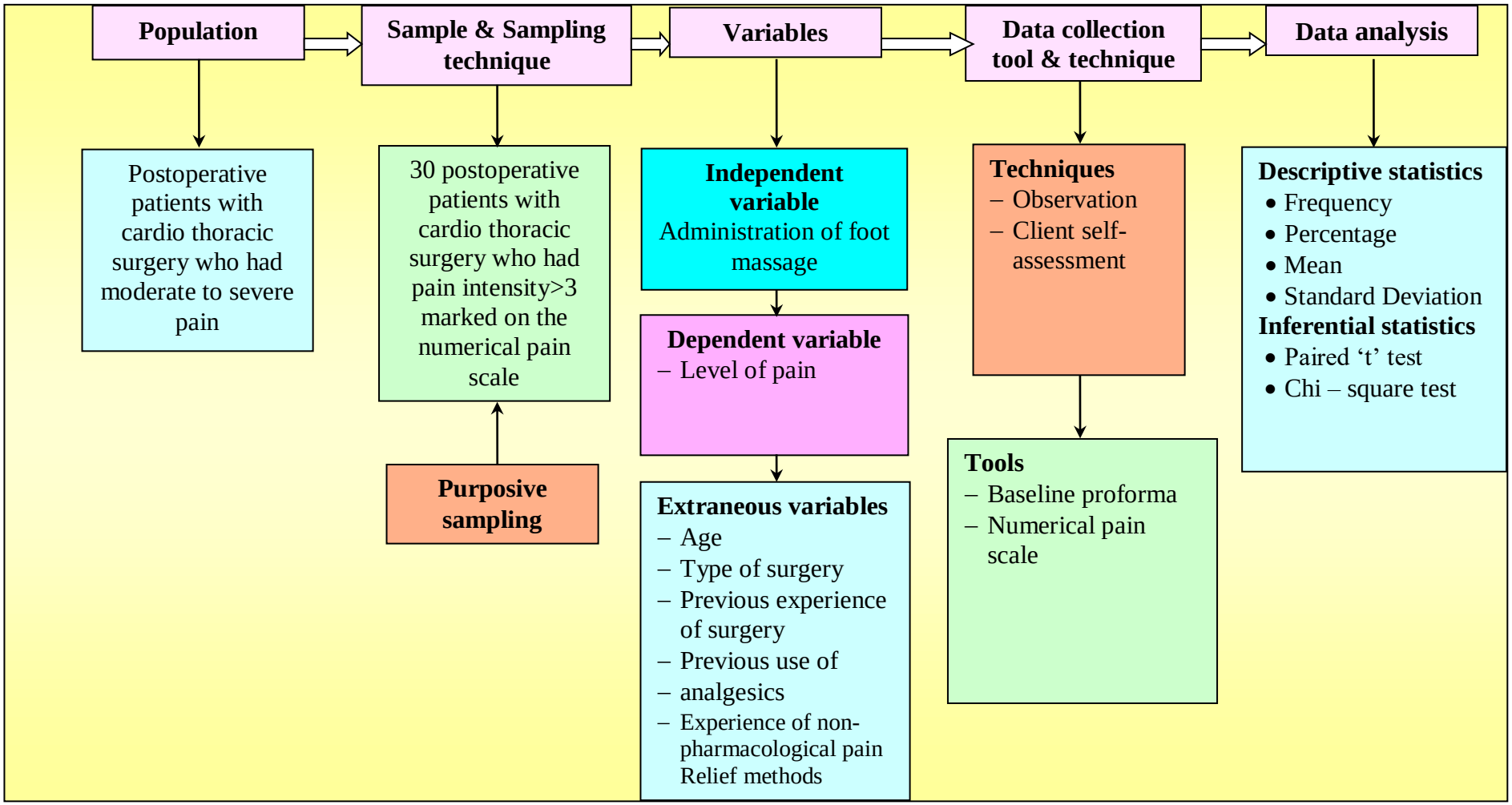
- age above 30 years
- both gender
- pain score more than three
- conscious
- immediate post operative period (1 week)

EXCLUSION CRITERIA

1. Post operative cardio thoracic surgery patients with damaged tissue or skin on foot.

2. Patients who are not willing to participate in research study.

FIG :3 SCHEMATIC REPRESENTATION OF RESEARCH DESIGN



DEVELOPMENT OF THE DATA COLLECTION INSTRUMENT

Data collection tools are the procedures or instruments used by the researcher to observe or measure the key variables in the research problem. Observational methods are the techniques for acquiring information for research purposes through direct observation and recording of phenomena. The tools selected for this study were:

1. Numerical pain scale

DATA COLLECTION METHOD: - Observation method

The following steps were adopted in the development of the tool:

1. Review of literature provided adequate content for the tool preparation.
2. Direct contact with the patients and significant others during clinical posting.
3. Opinion of experts from medicine, surgery and nursing departments.
4. Construction of a baseline Proforma.
5. Construction of numerical pain scale to assess pain intensity.
6. Content validity.
7. Pre-testing of the tool.
8. Reliability of the tool and instruments used was ascertained by rater-interrater reliability.

DESCRIPTION OF DATA COLLECTION INSTRUMENT

The data collection instruments consisted of two tools.

Tool I – NUMERICAL PAIN SCALE TO ASSESS THE LEVEL OF PAIN INTENSITY

The numerical rating scale comprised of a 10 cm horizontal line with end points marked as '0' and '10.' An increase in score denotes an increase in pain level and the score ranges from 0 – 10.

0 - No pain

1- 3 - Mild Pain

4- 6 - Moderate Pain

7 – 9 - Severe Pain

10 - Worst pain possible

For analysis the score 1 -5 was given to no pain, mild pain, moderate pain, severe pain and worst pain possible respectively.

CONTENT VALIDITY

Content validity refers to the degree to which an instrument measures what it is supposed to measure.

The content validity of the present tool along with the evaluation criteria checklist was submitted to 5 experts in the field of medical surgical nursing, surgery and physiotherapy for their opinion on the items in the tool. There was 100% agreement by experts and minimal modifications were made in base line proforma based on the given suggestion.

RELIABILITY OF THE TOOL

Reliability is defined as the extent to which the instrument yields the same results on repeated measure; it is concerned with consistency, accuracy, stability and homogeneity.

In this study standardised numerical pain assessment scale was used to measure the pain intensity of patients.

Pre testing was done by administering tools to three post operative patients with cardio thoracic surgery in the post operative wards of the KMCH hospital. the reliability of tool was established by testing the internal consistency and was established through test and retest method.

PILOT STUDY

A pilot study is defined as a small scale version or a trial run of the major study. Its function is to obtain information for improving the project or for assessing the feasibility. The principal focus is on the assessment of the adequacy of measurement. Prior to the study the investigator underwent 14-hour training on foot massage under an expert in the Physiotherapy.

The pilot study was conducted in the postoperative unit of Cardio thoracic intensive care unit Kovai Medical Center Hospital from 19.6.2016 to 25.6.2016. The investigator obtained formal permission from the concerned authority prior to the study. The study was conducted on 3 postoperative patients with cardio thoracic surgery who fulfilled the inclusion criteria for the selection of the sample. The purpose of the study was explained to the subjects and a written consent was obtained after assuring confidentiality. Baseline information was collected. The numerical pain score was obtained and foot massage (intervention) was given for 10 minutes. Pain intensity was checked immediately after intervention.

The tools were found feasible and practical. Analysis of the data was done using descriptive and inferential statistics. No further changes were made in the tool after the pilot study and the investigator proceeded for the main study.

DATA COLLECTION PROCESS

Data collection for the main study was done in the postoperative cardio thoracic surgery unit of Vinayaka Mission Hospital from 27.6.2016 to 27.7.2016. Formal permission obtained from the administrator before data collection. The purpose of the study was explained to the subjects and written consent was obtained after assuring confidentiality. Pre-assessment pain intensity was recorded. Foot massage with low stroke manipulations was applied on each leg of the subject for 5 minutes. Pain intensity was recorded immediately after the intervention. The data collection process was terminated by thanking the subjects for their cooperation.

1. PLAN FOR DATA ANALYSIS

Analysis is the systematic organisation and synthesis of research data and the testing of the research hypothesis using that data.

- The data obtained will be analysed using both descriptive and inferential statistics based on the objectives and hypotheses of the study.
- Baseline proforma containing sample characteristics will be analysed by using frequency and percentage.
- Impact of foot massage on pain intensity would be analysed by range, mean and standard deviation.
- Test of significance will be determined by using paired ‘t’ test.
- Association between pre-foot massage pain score and the selected variables would be analysed by chi- square test.

Plan for Data Analysis :

No.	Data Analysis	Method	Purposes
1.	Descriptive statistics	- Frequencies and percentages - mean and standard deviation	- For the analysis of the demographic data - For analyzing the pretest & posttest scores
2	Inferential statistics	- Paired 't' test - Chi – square test	- To find out the association between the pretest pain level of post operative cardio thoracic surgery patients with their selected demographic variable.

ETHICAL CONSIDERATION

In this study the investigator look into consideration of the ethical issues. No ethical issues raised by conducting the study.

> Permission obtained from the ethical committee of Dr.Mahalingam College of nursing.

> Permission obtained from the concerned authority in the Vinayaga Missions Hospital Salem.

> Written consent was obtained from the study samples.

> The subjects were informed that the confidentiality of the data will be maintained.

CHAPTER IV
ANALYSIS AND INTERPRETATION

INTRODUCTION

This chapter presents the analysis and interpretation of the data collected to determine the impact of foot massage on the level of pain, among postoperative patients with cardio thoracic surgery in Vinayaka Mission Hospital Salem.

The analysis of data involves the translation of the information collected during the course of the research project into interpretable, convenient and descriptive terms and to draw inferences from them using statistical methods. The purpose of analysis is to summarise, compare and test the proposed relationships and infer findings. The collected data was tabulated and analysed using descriptive and inferential statistical in order to meet the objectives of the study, and to test the hypotheses.

ORGANISATION OF THE STUDY FINDINGS

The data collected from the postoperative cardio thoracic surgery patients are organised, analysed and presented under the following headings:

Section I:

Description of demographic variables of respondents.

Section II:

Assessment of pain level before and after the foot massage among the postoperative cardio thoracic surgery patients.

Section III:

Comparison of pain level before and after the foot massage among post operative cardio thoracic patients

Section IV:

Find out the Association between levels of pre-foot massage pain score and the selected variables.

Section I: Descriptive analysis of demographic variables

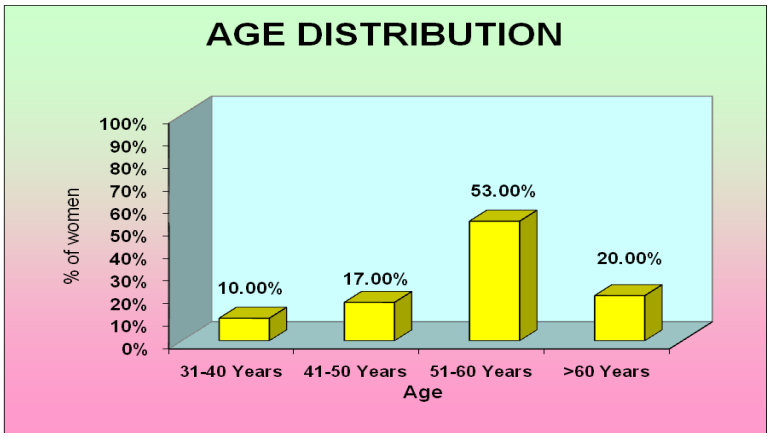
This section deals with the analysis of the data collected from 30 cardio thoracic surgery patients based on their specified inclusion criteria and is explained in frequency and percentage and represented table 4:1

Variables	Pretest Pain Level						X^2 Value
	Mild		Moderate		Severe		
	F	%	F	%	F	%	
Age (Years)							
31-40	3	10	0	0	0	0	18.02
41-50	0	0	5	16	0	0	S
51-60	3	10	5	16	8	27	P<0.05
>60	0	0	6	20	0	0	
Sex							
Male	3	10	8	27	11	39	11.2
Female	3	10	4	13	1	1	S
							P<0.05
Education							
Illiterate	0	0	0	0	0	0	5.9
Higher Secondary	0	0	5	16	8	27	NS
Graduate Level	0	0	1	1	5	16	P>0.05
Post Graduate Level	0	0	1	1	10	33	
Occupation							
Coolie	0	0	1	1	4	13	2.75
Sedentary	0	0	4	13	16	53	NS
Heavy Work	0	0	2	6	9	13	P>0.05
Type Of Surgery							
CABG	0	0	4	13	14	46	6.2
Valve Replacement	0	0	0	0	3	10	NS
Lobectomy	0	0	0	0	0	0	P>0.05
Angioplasty	0	0	6	20	0	0	
Previous Analgesia							
Yes	0	0	3	10	7	23	2.3
No	0	0	4	13	16	53	NS
							P>0.05

Previous Surgery Yes No	0 0	0 0	2 5	6 16	7 6	23 20	2.007 P>0.05
Pain Relief Method Other Than Medications Yes No	0 0	0 0	2 5	6 16	6 17	20 53	7.7 P>0.05

FIG.4: DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO AGE

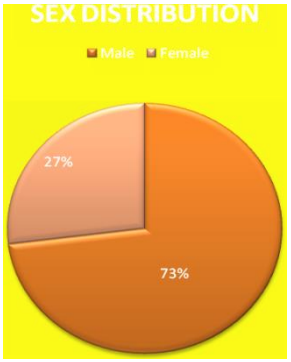
Demographic variables	Experimental Group N= 30	
Age in years	**Frequency**	**Percentage**
31-40	**3**	**10%**
41 – 50	**5**	**17%**
51 – 60	16	53%
➢ **60**	6	20%



This bar diagram shows that, 3(10%) samples were in the age group of 31-40 years, 5(17%) in the age group of 41-50 years, 16(53%) in the age group of 51-60 years, 6(20%) in the age group of > 60 years. Thus it can be interpreted that highest percentage was in the age group of 51-60years.

Fig 2 DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO SEX

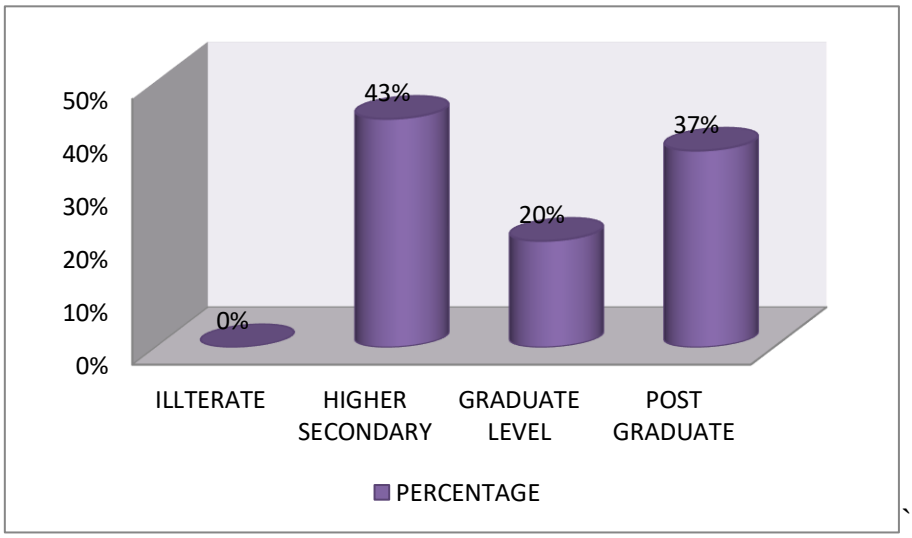
Demographic variables	Experimental Group N= 30	
Sex	**Frequency**	**Percentage**
Male	**22**	**73%**
Female	**8**	**27%**



This pie diagram shows regarding sex, the maximum 22(73%) of samples was males and 8(27%) of the samples was females.

Fig. 4.3: DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO EDUCATIONAL QUALIFICATION

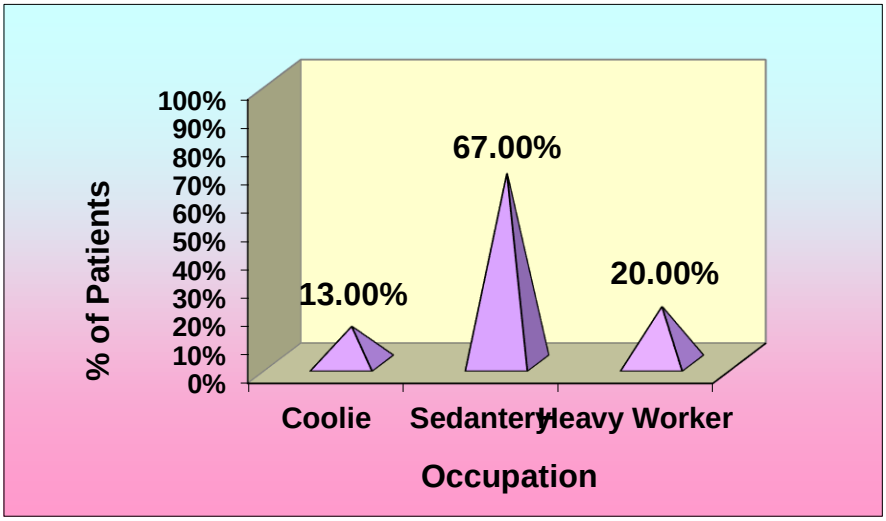
Demographic variables	Experimental Group N= 30	
Education	**Frequency**	**Percentage**
Illiterate	**0**	**0%**
Higher secondary	**13**	**43%**
Graduate level	**6**	**20%**
Post Graduate	**11**	**37%**



This cylindrical diagram shows that the educational qualification, 13(43.3%) of the patients are Higher secondary level of education, 6(20%) have Graduate level of education, 11(37%) have post Graduate level of education, It seems that most of the patients had Higher Secondary level of education.

Fig .4.4: DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO THEIR OCCUPATION

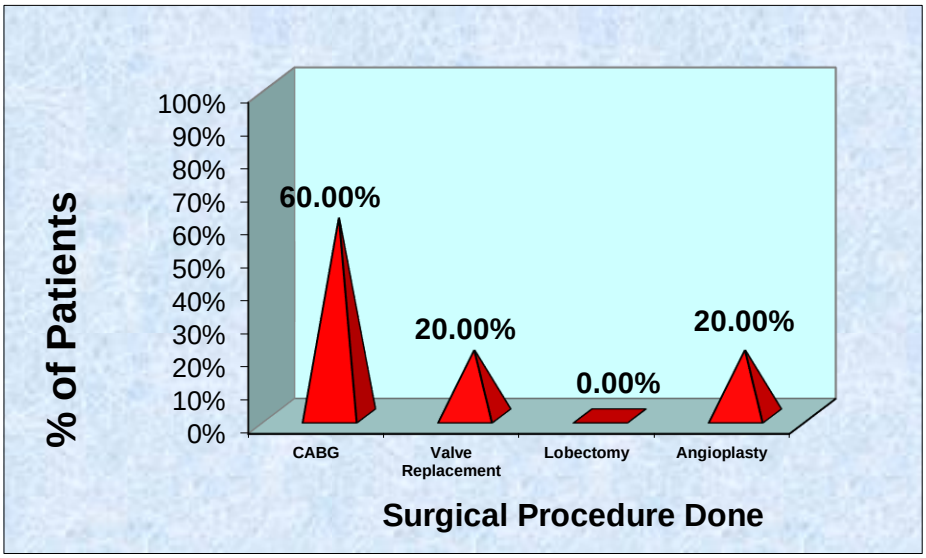
Demographic variables	Experimental Group N= 30	
Occupation	**Frequency**	**Percentage**
Coolie	4	13%
Sedentary	20	67%
Heavy worker	6	10%



This conical diagram shows that the occupation, of maximum 4(13%) of patients were coolie, 20(67%) were doing sedentary workers, 6(20%) were doing heavy workers.

Fig 4.5 DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO THE SURGERY DONE

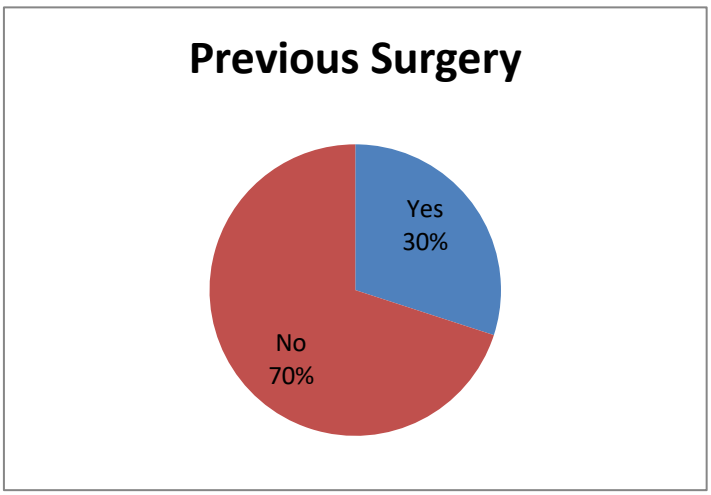
Demographic variables	Experimental Group N= 30	
Surgical procedure done	**Frequency**	**Percentage**
CABG	**18**	**60%**
Value replacement	**6**	**20%**
Lobotomy	**0**	**0%**
Angioplasty	**6**	**20%**



This conical diagram shows that the18 (60%) of patients had CABG, 6 (20%) of patients had valve Raplacement, 6 (20%) of patients had angioplasty. It seems that most of the patients had CABG

Fig.4.6 DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO PREVIOUS SURGERY DONE

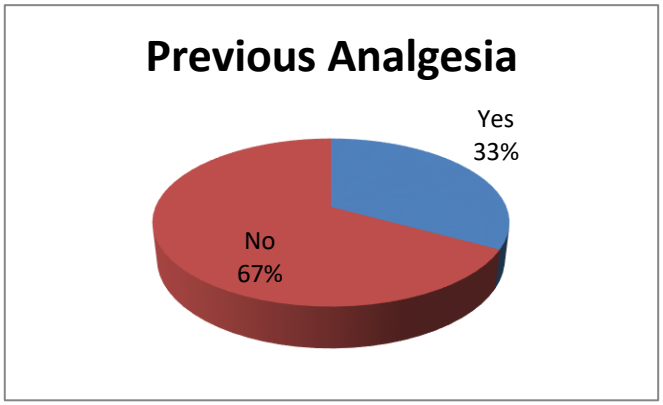
Demographic variables	Experimental Group N= 30	
Pervious surgery	**Frequency**	**Percentage**
Yes	**9**	**30%**
No	**21**	**70%**



This pie diagram shows that 21 (70%) of patients had no surgery in past and 9(30%) of patients had surgery in the past. It shows that majority of the patients didn't had any surgery in the past.

Fig 4.7 DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO PREVIOUS ANALGESIA.

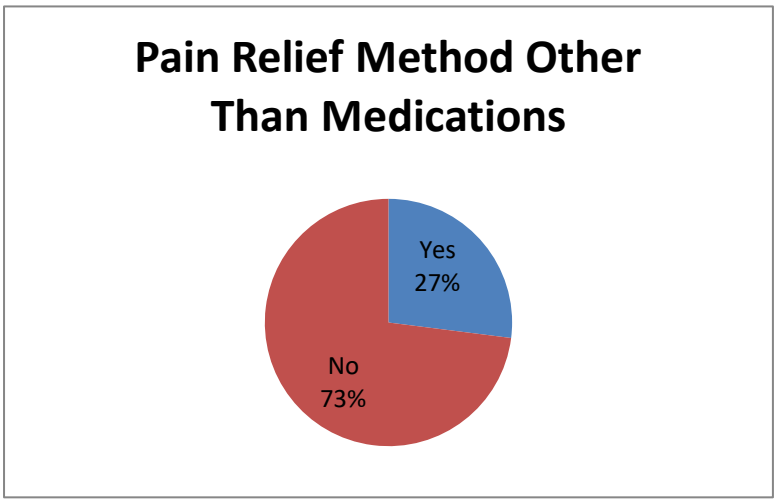
Demographic variables	Experimental Group N= 30	
Previous analgesia	**Frequency**	**Percentage**
Yes	**10**	**33%**
No	**20**	**67%**



This pie diagrams shows that 20(67%) of patients had no previous experience of analgesia, 10(33%) of patients had previous experience of analgesia. Thus It seems most of the patients didn't had previous exposure of analgesia.

Fig 4.8: DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO PRIOR PAIN RELIEF METHOD OTHER THAN MEDICATION

Demographic variables	Experimental Group N= 30	
Pain relief method other than medications	**Frequency**	**Percentage**
Yes	**8**	**27%**
No	**22**	**73%**



This pie diagram shows that **22**(73%) of subjects had no experience of non-pharmacological pain management. Of the remaining 8(27%) subjects, had undergone traditional massage. It shows that majority of subjects had no prior pain relief other than medication.

SECTION II

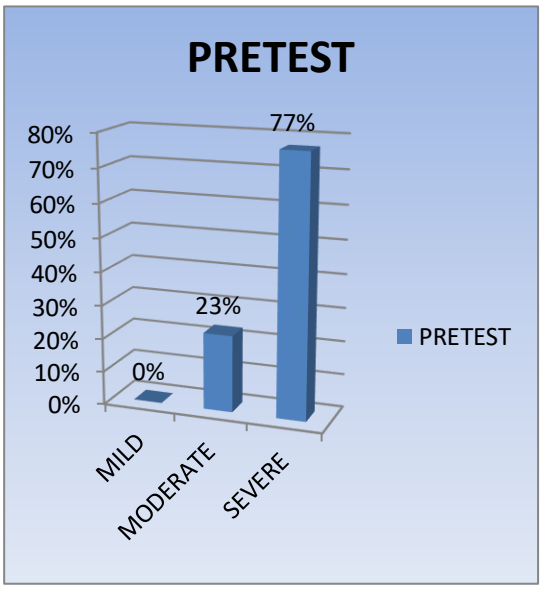
1. ASSESS THE PAIN LEVEL BEFORE AND AFTER THE FOOT MASSAGE AMONG POST OPERTIVE CARDIO THORACIC SURGERY PATIENTS IN VINAYAKA MISSION HOSPITAL AT SALEM

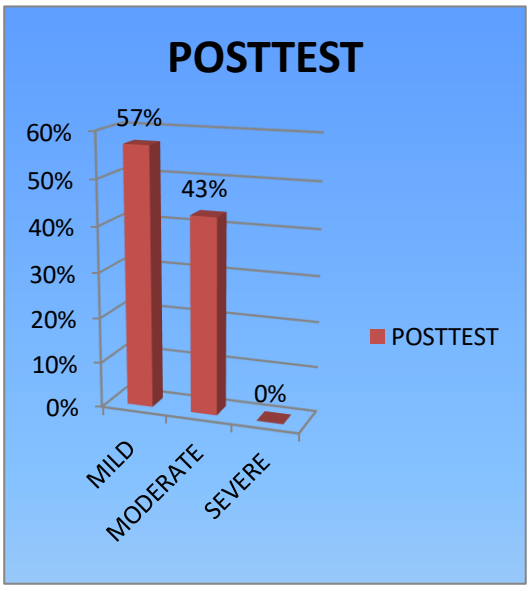
Level Of Pain	Total Score	Min-Max Score	Pre test		Post test	
			Mean score	%	Mean score	%
No Pain	10	0-10	0	0%	0	0%
Mild	10	0-10	0	0%	1.26	12%
Moderate	10	0-10	1.13	11%	1.93	19%
Severe	10	0-10	5.9	59%	0	0%
Worst	10	0-10	0	0%	0	0%

Table no:4.9 shows that the experimental group of post operative cardio thoracic surgery patients pretest and post test pain level on each aspects of foot massage , in pre test the post operative cardio thoracic surgery patients scored less whereas in post test the score is increased on foot massage.

THE PAIN LEVEL BEFORE AND AFTER THE FOOT MASSAGE AMONG POST OPERTIVE CARDIO THORACIC SURGERY PATIENTS

Level of Pain	Pre Test	Post Test
Mild	0%	57%
Moderate	23%	43%
Severe	77%	0%





I **II**

Fig:4.9 This bar diagram no 1 shows that the pre test score reveal that 23(77%) of the samples had severe pain, 7(23.3%) of the samples had moderate pain.

Bar diagram no II show that,in the post test 17(57%) had mild pain, 13(43%) of the samples had moderate pain. It showed that foot massage was very effective to reduce the pain of post cardiothoracic surgery patients.

EFFECTIVENESS OF FOOT MASSAGE IN THE PAIN LEVEL AMONG POST OPERTIVE CARDIO THORACIC SURGERY PATIENTS

variables	Pre test%	Post test%	Net Benefit%
Level of pain	**70%**	**30%**	**40%**

SECTION III

Compare the pain level before and after the foot massage among post operative cardio thoracic surgery patients

Level of pain before and after the foot massage for 30 post operative cardio thoracic surgery patients were assessed by using numerical pain scale analysed by descriptive and inferential statistics.

In order to findout the significance of difference in the level of pain before and after the foot massage for 30 postoperative cardiothoracic surgery patients, the following null hypothesis was formulated:

H_1: The post foot massage pain score will be significantly lower than the pre foot massage pain score.

Table4:5: Paired 't'test showing significant difference between pre- and post-foot massage pain level

N=30

Numerical pain scale	**Overall score**	**Mean**	**Mean %**	**SD**	**Mean Difference**	**Paired t test**
O_1 (Pre test)	10	7.3	76%	3.8	26%	10.8*
O_2 (post test)	10	3.5	50%	1.9		P<0.05

$T_{(29)}$ at 0.05 level = 10.8 *Significant

It is evident from Table 4:5 that the calculated't' values are greater than table value ($t_{(29)}$ = 10.8, P<0.05) showing that there was significant difference in the pre and post-foot massage pain score. Hence the null hypothesis rejected and research hypothesis accepted.

SECTION IV

To find the Association between the pre-foot massage pain score with the selected demographic variables such as age and type of surgery

Table 4.6 To test the association between pre foot massage pain score with the selected demographic variables.

Variables	Pretest Pain Level						X^2 Valve
	Mild		Moderate		Severe		
	F	%	F	%	F	%	
Age (Years)							
31-40	3	10	0	0	0	0	18.02
41-50	0	0	5	16	0	0	S
51-60	3	10	5	16	8	27	P<0.05
>60	0	0	6	20	0	0	
Sex							
Male	3	10	8	27	11	39	11.2
Female	3	10	4	13	1	1	S
							P<0.05
Education							
Illiterate	0	0	0	0	0	0	5.9
Higher Secondary	0	0	5	16	8	27	NS
Graduate Level	0	0	1	1	5	16	P>0.05
Post Graduate Level	0	0	1	1	10	33	
Occupation							
Coolie	0	0	1	1	4	13	2.75
Sedentary	0	0	4	13	16	53	NS
Heavy Work	0	0	2	6	9	13	P>0.05
Type Of Surgery							
CABG	0	0	4	13	14	46	6.2
Valve Replacement	0	0	0	0	3	10	NS
Lobectomy	0	0	0	0	0	0	P>0.05
Angioplasty	0	0	6	20	0	0	
Previous Analgesia							
Yes	0	0	3	10	7	23	2.3
No	0	0	4	13	16	53	NS
							P>0.05
Previous Surgery							
Yes	0	0	2	6	7	23	2.007
No	0	0	5	16	6	20	P>0.05

Pain Relief Method Other Than Medications Yes No	0 0	0 0	2 5	6 16	6 17	20 53	7.7 P>0.05

N=30

S = Significant

NS = Not significant

Table 4:6 shows that there was association between pre foot massage pain score, age (χ^2 =18.02 and sex 11.2, P<0.05).Therefore research hypothesis was accepted and the null hypothesis rejected.

There was no association between pre-foot massage pain with selected demographic variables such as score, education (χ^2 =5.9, P<0.05), occupation (χ^2 = 2.75, P<0.05) type of surgery (χ^2 =6.2, P<0.05) , prior analgesia(χ^2 =2.3, P<0.05) , previous pain relief methods(χ^2 =7.7, P<0.05). Therefore null hypothesis was accepted and the research hypothesis rejected.

ASSOCIATION BETWEEN AGE AND LEVEL OF PAIN BEFORE FOOT MASSAGE AMONG THE CARDIO THORACIC SURGERY PATIENTS.

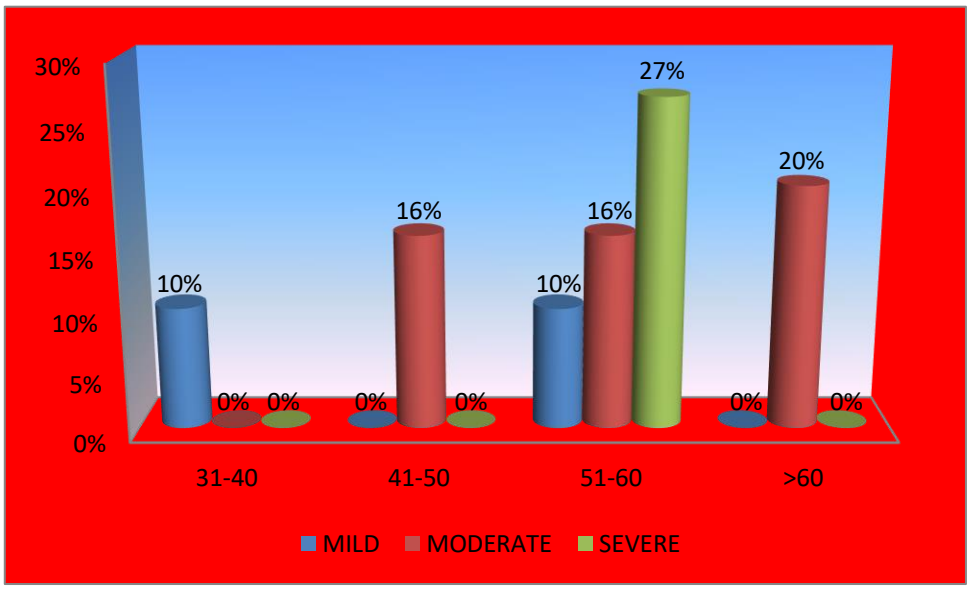


Fig 4.10 This bar diagram shows the association between age and level of pain before foot massage among the cardio thoracic surgery patients.

ASSOCIATION BETWEEN SEX AND LEVEL OF PAIN BEFORE FOOT MASSAGE AMONG THE CARDIO THORACIC SURGERY PATIENTS.

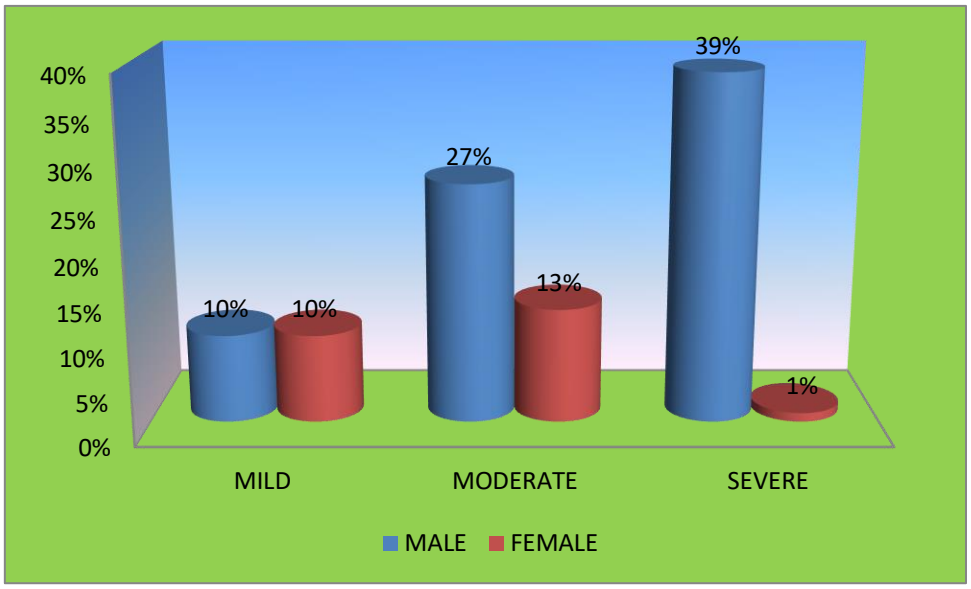


Fig 4.11This Bar diagram shows the association between sex and level of pain before foot massage among the cardio thoracic surgery patients

CHAPTER –V
DISCUSSION

This chapter deals with the discussion of the study with appropriate literature review, statistical analysis and findings of the study based on objectives of the study. The aim of the study was to evaluate the effectiveness of foot massage on the level of pain among post operative cardio thoracic surgery patients who were admitted in Vinayaka Mission hospital. A pre experimental one group pre test post test design was used to assess the effectiveness of foot massage on pain among post operative patients.

Thirty post operative cardiothoracic surgery patients at Vinayaka Mission hospital were selected for the study by using non probability purposive sampling method. Pre test was conducted by using numerical rating scale for pain for all the subjects.

MAJOR FINDINGS OF THE STUDY

I The first objective of the study was to assess the level of post operative pain in cardiothoracic surgery patients before and after implementation of foot massage.

Table 4:9 display that 23(77%) of the samples had severe pain, 7(23%) of the samples had moderate pain before giving foot massage. It also shows that 17(57%) of the samples had mild pain and 13(43%) of the samples had moderate pain after giving foot massage.

II the second objective was to determine the effectiveness of foot massage on the level of pain among post operative cardiothoracic surgery patients.

Overall pain score of pre-test mean score was 3.8 which is 76% and overall pain post test mean score was 2.5, which is 50% of total score revealing that after giving foot massage the pain level got reduced.

III The third objective was to find out the association between the pain with the selected demographic variables.

Table 4:6 shows that there was association between pre foot massage pain score, age (χ^2 =18.02, P<0.05). And sex (x^2=11.2, p < 0.05). Therefore research hypothesis was accepted and the null hypothesis rejected.

There was no association between pre-foot massage pain score, education (χ^2 =5.9, P<0.05), occupation (χ^2 = 2.7, P<0.05) type of surgery (χ^2 =6.2, P<0.05), prior analgesia (χ^2 =2.3, P<0.05), previous pain relief methods (χ^2 =7.7, P<0.05). Therefore null hypothesis was accepted and the research hypothesis rejected.

CHAPTER VI

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter represents the summary, findings, conclusion, implications and recommendations, which create a base for evidence based practice.

STATEMENT OF THE PROBLEM

"A study to evaluate the effectiveness of foot massage on the level of pain among post operative cardio thoracic surgery patients in Vinayaka Mission hospital at Salem"

SUMMARY OF THE STUDY

The study was conducted in vinayaka mission hospital at Salem. The population of the study included postoperative patients with cardio thoracic surgery. Purposive sampling technique was used to select 30 subjects with pre determined criteria from the population

Tool for data collection were:

Tool I: Numerical pain scale to assess pain

The content validity of the tool was established with the help of 5 experts Since numerical pain scale is already standardised tools; reliability test was not established for the same. A pilot study was conducted to confirm the feasibility for conducting the main study.

The main study was conducted between 27.6.2016 to 27.7.2016. The data obtained were analysed using both descriptive and inferential statistics. The level of significance for testing hypotheses was set at 0.05.

The conceptual framework used for the present study was based on Roy's Adaptation Model. The focus of this theory is the adaptation of the individual to various stimuli both from the environment and from within.

The variables of the present study were: independent variable – foot massage, and dependent variable – pain.

The investigator used an preexperimental research approach to assess the impact of foot massage on level of pain among postoperative patients with cardio thoracic surgery. The research design selected was pre-experimental (one group pre-test post-test) design.

The findings of the study showed significant difference in pain between the pre- and post-foot massage pain score immediately after foot massage($t= 10.8$, $p<0.05$) for the numerical pain scale.

There was association between pre foot massage pain score and age ($\chi^2 =18.02$, $P<0.05$).and sex ($_X{}^2 = 11.2$, $p < 0.05$) Therefore research hypothesis was accepted and the null hypothesis rejected.

There was no association between pre-foot massage pain score, education ($\chi^2 =5.9$, $P<0.05$), occupation ($\chi^2 = 2.7$, $P<0.05$) type of surgery ($\chi^2 =6.2$, $P<0.05$), prior analgesia ($\chi^2 =2.3$, $P<0.05$), previous pain relief methods ($\chi^2 =7.7$, $P<0.05$). There fore null hypothesis was accepted and the research hypothesis rejected.

On the whole, carrying out present study was really an enriching experience to the investigator. The constant encouragement and guidance by the guide, cooperation and interest of respondents to participate in the study contributed to the fruitful completion of the study.

CONCLUSION

This study attempted to find out the impact of foot massage on the level pain of postoperative patients with cardio thoracic surgery.

- The pre-foot massage pain level was significantly higher than the post-foot massage pain level.

- The highest significance of difference in pain level was found between pre-foot massage and 10 minutes after foot massage.

- There was significant association between the demographic variable, age and sex with pre-foot massage pain score.

NURSING IMPLICATIONS

The findings of this study have brought out certain facts that have far-reaching implication for nursing in the area of practice, education, administration and research.

NURSING PRACTICE

Today, more than ever, healthcare reform calls nursing to provide cost effective care. Concern about possible side effects of drug treatment and heavy expenses on medical care are the reasons why people seek complimentary and alternative medicine, because the dimensions of pain involve physical, psychological, social and spiritual health. There will be a potential reduction in the quality of life. Pain related anxiety, and sleeplessness release stress hormones, which have deleterious effects upon post-surgical outcome.

Using the current research findings nurses can use foot massage as an effective intervention in their practice. Foot massage is cost effective, easy to learn, and has no adverse effects. It does not require additional equipment, extra preparation, or expenditure. Foot massage as a means of touch can be used by the nurses to communicate care and concern for the patients.

The findings of this study can be incorporated in the training of other healthcare personnel and family members in providing healthcare.

NURSING EDUCATION

Alternative and complementary therapies are increasing in popularity (British Medical Association, 1993). Nurses seem to be equipped to act as advocates with regard to pain management in order to assess and alleviate pain of the patients. The use of non-pharmacological measures like foot massage can be easily incorporated in nursing education along with other complementary therapies. To equip nurses to provide holistic care the nursing curriculum needs to cover non-pharmacological measures such as foot massage for pain management. Nurse educators need to highlight the non-pharmacological pain relief measures like foot massage in the curriculum of basic nursing education as part of pain assessment and management. Ongoing education can be planned for graduate students. Students can be given a project work to experiment the need for foot massage in pain management. Foot message as a non-pharmacological pain management method can be highlighted as a part of in-service education programme. Family members should also be educated on foot massage techniques which will enable them to help and care for the individual who is in pain and thereby making these measures beneficial to common people.

NURSING ADMINISTRATION

Today, there is an increasing need for quality and holistic care. The findings of this study could be made use of by nursing and non-nursing personnel. Nursing administrators are in the key position to formulate policies and the execution of quality nursing based on research findings with necessary changes in nursing education and practice. They should develop nursing practice standards, protocols, and manuals for pain assessment and management. Awareness programmes could be organised and information could be disseminated through media, like newspapers, magazines, television and internet. In-service education for the staff nurses could be provided with special emphasis on the use of foot massage to relieve pain in postoperative patients.

NURSING RESEARCH

A profession seeking to improve the practice of its members and to enhance its professional stature strives for the continuous development of a relevant body of knowledge. It is apparent that there are significant gaps in research with regard to foot massage and pain management. It is also observed that the published research studies and trials on foot massage in the Indian setting are very limited.

Nurse researchers should be aware of the new trends in the existing healthcare system. Emphasis should be laid on research in the area of non-pharmacological measures of pain management in postoperative patients. The findings of the research need to be disseminated through publications so that the utilization of such research findings is encouraged.

RECOMMENDATIONS

1. The study can be replicated on a larger sample with general surgery to have generalisation.

2. A similar study can be replicated on a larger sample having a control group.

3. The study could be undertaken during chronic painful experience like cancer pain.

4. Study could be conducted with a control group to assess the effect of other complimentary therapies such as acupressure, progressive muscle relaxation, and guided imagery.

5. A comparative study can be conducted with more than one intervention.

SUGGESTIONS

1. Complementary therapy cell could be arranged in the institution and multidisciplinary team could be introduced.

2. Pain assessment and management should be given emphasis in postoperative nursing care practices

3. Non-pharmacological methods of pain management should be emphasised in nursing curriculum.

4. Nurses can be given training programmes on non-pharmacological pain management.

5. Findings of this study can be utilised to educate family members and non-nursing personnel to provide quality services in hospital

CHAPTER VII

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www.google.com

www.iacts.org

www.pubmed.com

www.mamma.com

www.mediline.com

www.numerical pain scale.com

www.foot massage.com

CERTIFICATE BY THE EDITOR

This is to certify that the dissertation entitled "**A STUDY TO EVALUATE THE EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AMONG POST OPERATIVE CARDIO THORACIC SURGERY PATIENTS IN VINAYAKA MISSION HOSPITAL AT SALEM"** is a bonafide research work done by Rosy.V**,** M.Sc., (N) IInd year (Branch I Medical surgical nursing) Post graduate degree student of Dharmarathnakara Dr. Mahalingam Institute of Paramedical Sciences and Research, Sakthi Nagar, Bhavani Taluk, Erode District, Edited this manuscript on behalf of the partial fulfillment of the prerequisite for the degree of Master of Science in Nursing (Medical Surgical Nursing)

Date :

Place : **Signature of the Editor**

VIMS HOSPITALS

Date:27.07.2016

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mrs.Rosy.V** Second year student of **M.Sc Nursing** of Dr.Mahalingam college of Nursing has done her **Data Collection** in our institution from **June 27,2016 to July 27,2016**

During this tenure, her conduct was good. We wish her all the success in her future endeavors.

Dr.K.Meenahshi Sundaram

Medical Director

Dr. K. Meenakshi Sundaram
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LETTER SEEKING PERMISSION TO CONDUCT PILOT STUDY

Ref. No. :

Date : .....

From

MRS.ROSY V, M.Sc., (N) II Year,
(Speciality – MEDICAL SURGICAL NURSING),
Dr. Mahalingam College of Nursing,
Sakthi Nagar (Po),
Bhavani (TK), Erode (DT),
Tamilnadu.

To

Dr. R. RAGAVENDRAN., M.S., MCh (CTS)
Consultant Cardio thoracic Surgeon
KMCH speciality hospital, ERODE -09.

Through : The Principal,
Dharmarathnakara Dr.Mahalingam Institute of Paramedical Sciences & Research,
Sakthi Nagar, Bhavani Tk,
Erode dist – 638315.

PRINCIPAL
College of Nursing
Sri Adichunchanagiri Shikshana Trust
Dharmarathnakara Dr. Mahalingam Institute of Paramedical Sciences & Research,
Sakthinagar, Bhavani Taluk,
Erode Dist. - 638 315.

Respected Sir / Madam,

SUB: Permission to conduct study - Reg.

- - - - -

I the II year M.Sc., Nursing student of Dr. Mahalingam College of Nursing, Sakthi Nagar. As a partial fulfillment of Master of Science in Nursing, I have undertaken the following research study, which has to be submitted to The Tamilnadu Dr.M.G.R. medical University, Chennai.

RESEARCH STUDY:

"A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AMONG POST OPERATIVE CARDIO THORACIC SURGERY PATIENTS AT KMCH HOSPITAL, ERODE".

Contin...2…

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Website : www.dmipsr.com E-mail : dmipsr@gmail.com

Ref. No. :

Date : .....

I kindly request you to permit me to do reliability of the prepared tool on the effectiveness of foot massage on the level of pain among post operative cardio thoracic surgery patients with effect from --------- to ---------.

I kindly request you to permit me to conduct the proposed study. Please, kindly do the needful.

Thanking you,

Date :

Place :

Yours Sincerely,

(ROSY V)

Permitted.

Dr R RAGAVENDRAN., MS., Mch (CTS)
ASSISTANT CARDIOTHORACIC SURGEON
Reg No:56688
KMCH Speciality Hospital,
ERODE-09,INDIA.

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Ref. No. : **LETTER SEEKING EXPERT OPINION ON CONTENT VALIDITY** Date .....

From

MRS.ROSY V, M.Sc., (N) II Year,
(Speciality – MEDICAL SURGICAL NURSING),
Dr. Mahalingam College of Nursing,
Sakthi Nagar (Po),
Bhavani (TK), Erode (DT),
Tamilnadu.

To

---,
---,
---.

Through,

The Principal,
Dr. Mahalingam College of Nursing,
Sakthi Nagar (Po),
Bhavani (TK), Erode (DT).

PRINCIPAL
College of Nursing
Sri Adichunchanagiri Shikshana Trust
Dharmarathnakara Dr. Mahalingam Institute
of Paramedical Sciences & Research,
Sakthinagar, Bhavani Taluk,
Erode Dist. - 638 315.

Respected Sir / Madam,

SUB: Request for the Validation of the tool.

I the II year M.Sc., Nursing student of Dharmarathnakara Dr. Mahalingam College of Nursing, Sakthi Nagar. As a partial fulfillment of Master of Science in Nursing, I have undertaken the following research study, which has to be submitted to The Tamilnadu Dr.M.G.R. Medical University, Chennai.

RESEARCH STUDY:

"A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AMONG POST OPERATIVE CARDIO THORACIC SURGERY PATIENTS IN VINAYAKA MISSION HOSPITAL AT SALEM".

...2...

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Ref. No. : *Date :* .....

To achieve the objective of dissertation, I have prepared the following tools:

I. Demographic data and

II. Standard questionnaire on the effectiveness of foot massage on the level of pain among post operative cardio thoracic surgery patients. With regard to this, I kindly request you to go through the tools and validate it against the given criteria and render your valuable suggestions that will keep in improving the study at an earliest.

Thanking you in anticipation,

Yours Sincerely,

(ROSY V)

Enclosures:

1. Demographic data
2. Blueprint and Standard Questionnaire
3. Criteria check list for evaluation of tool
4. Content validity certificate for tool.
5. Self addressed cover.

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Ref. No. :

Date : .....

CONTENT VALIDITY CERTIFICATE

This is to certify that the student Mrs.Rosy V, W/o.Mr.John David is studying in final M.Sc., (N) Post Graduate Degree Course at Dharmarathnakara Dr.Mahalingam Institute of Paramedical Sciences & Research, Sakthi Nagar.

Topic Entitled:

"A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AMONG POST OPERATIVE CARDIO THORACIC SURGERY PATIENTS IN VINAYAKA MISSION HOSPITAL AT SALEM".

Her content for the study is validated and was found reliable.

Date:

Place:

Signature of expert with seal

M. SUDHA DEVI, Msc (N),
Reader i/c.

Velalar College of Nursing
Maruthi Nagar
Thindal
Erode - 638 012

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Her content for the study is validated and was found reliable.

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Ref. No. :

Date : 12/07/2016

CONTENT VALIDITY CERTIFICATE

This is to certify that the student Mrs.Rosy V, W/o.Mr.John David is studying in final M.Sc., (N) Post Graduate Degree Course at Dharmarathnakara Dr.Mahalingam Institute of Paramedical Sciences & Research, Sakthi Nagar.

Topic Entitled:

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Her content for the study is validated and was found reliable.

Date: 12/07/2016.

Place: Pallakkapalayam
Namakkal (Dt).

Signature of expert with seal

Mrs.C.GRAZY.M.Sc.,(N)
Medical Surgical Nursing
RN: 70475 RM:75756

CERTIFICATE OF STATISTICAL ANALYSIS

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation paper titled, "**A study to evaluate the effectiveness of Foot massage on the level of pain among post operative cardio thoracic surgery patients in vinayaka mission hospital, Salem" by Mrs. Rosy** has been checked for accuracy of statistical analysis and interpretation and was apt for its purpose.

Signature

Statistician.

குழந்தைகள்குடும்பம்
(Kuzhanthaikal Kudumpam)
107, வெள்ளலூர் சாலை,
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E.mail : ffcindia@eth.net

DATE:

TO WHOMESOEVER IT MAY CONCERN

This is to certify that **MRs.ROSY.V** II year M.Sc(N), Dr.Magalingam college of Nursing, Erode has undergone training program in techniques of foot massage used for Post cardio thoracic surgery patient from----------to ----------.

Moreover she can perform the techniques effectively for post cardio thoracic surgery patient.

1.M.E.MUKIL SINGH M.P.T(ORTHO),M.Sc,PGDHM,
2.HOD,Physio & Rehab Unit
3.Families for children,podanur,
4.Coimbatore

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Topic Entitled:

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Her content for the study is validated and was found reliable.

Date:

Place:

Signature of expert with seal

Dr.R.RAGAVENDRAN.,MS.,Mch (CTS)
CONSULTANT CARDIOTHORACIC SURGEON
Reg No:56688
KMCH Speciality Hospital,
ERODE-09,INDIA.

Annexure VI

Tool

Baseline Proforma

Instruction: The investigator places a tick mark (✓) in the space provided against the relevant answer.

1. Age (in years)

1.1 31 – 40 [ ]

1.2 41 – 50 [ ]

1.3 51 – 60 [ ]

1.4 > 60 [ ]

2. Sex

2.1 Male [ ]

2.2 Female [ ]

3. Educational qualification

3.1 Illiterate [ ]

3.2 Higher secondary [ ]

3.3 Graduate level [ ]

3.4 Post graduate level [ ]

4. Occupation

4.1 Coolie [ ]

4.2 sedentary [ ]

4.3 heavy worker [ ]

5. Surgical procedure done[type of thoracic done]

5.1 Lobectomy [ ]

5.2 Valve replacement or reconstruction [ ]

5.3 Angio plasty / angio graphy

5.4 CABG [ ]

6. Have you undergone any surgery in the past?

6.1 Yes [ ]

6.2 No [ ]

7. Have you received any type of analgesia or anaesthesia in the past?

7.1 Yes [ ]

7.2 No [ ]

8. Have you had any pain relief method other than medications for pain in the past?

8.1 Yes [ ]

8.2 No [ ]

9. If yes, type of therapy

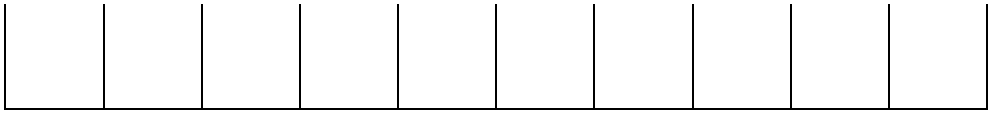
9.1 Acupuncture [ ]

9.2	**Traditional massage**	**[ ]**
9.3	**Aroma therapy**	**[ ]**
9.4	**Acupressure**	**[ ]**
9.5	**Yoga**	**[ ]**
9.6	**Music therapy**	**[ ]**

NUMERICAL RATING SCALE FOR PAIN

Instruction:

Please place a tick mark according to the level of your pain on the scale given below.



0 1 2 3 4 5 6 7 8 9 10

0	**No pain**
1 – 3	**Mild pain**
4 – 6	**Moderate pain**
7 – 9	**Severe pain**
10	**Worst pain possible**